ULTRACASTER-2000

INSTALLATION AND OPERATION MANUAL

Please leave this manual with the unit after installation

Important warranty information enclosed - see page 2.

Nel-Tech Labs, Inc.
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Manchester, NH 03109

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WARNING: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

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1 Introduction

The **UltraCaster** is a Digital Audio Messaging System designed specifically for application in Point-of-Purchase Merchandising. **UltraCaster** offers the performance, ease of operation, high reliability and quality of digital storage and audio processing, combined with microprocessor technology to achieve truly natural sound reproduction and user friendly features.

The **UltraCaster** offers a comprehensive set of features designed specifically for recording and timed-playback of Point-of-Purchase advertisements. **UltraCaster** supports up to 32 messages with a total message time of over 64 minutes. Messages may be recorded from the embedded tape cassette player, a high quality telephone handset or other external audio source. A built-in monitor speaker aids in verification and review of recorded messages, and local monitoring of the audio output to the sound system including messages and background music. Message playback can be automatically timed, externally driven or manually forced. Automatic message timing ranges from continuous to 24 hours in 1-second timing increments, and messages may be individually selected for automatic operation.

When used in conjunction with a background music source,the **UltraCaster** will gently fade the background music to a user defined fade level while the message plays. After the message ends the background music is restored to its user defined play level.

The **UltraCaster** provides the ultimate alternative to magnetic tape systems at an affordable price. Its simplicity of use and greatly increased quality and reliability make most tape systems obsolete.

2 Features

! Up to 64 minutes of message time at 3.5 Khz

! User selectable message configurations
  (1, 2, 4, 8 16 or 32 messages)

! User selectable audio bandwidths
  (3.5, 3.5 Enhanced, 7.0 and 7.0 Enhanced)

! Embedded Tape Transport for automatic message loading

! Handset Aux Input for manual message loading

! Message Play Options
  (Timed/Continuous/Trigger)

! Message Selection / Deselecting

! Liquid Crystal Display

3 System Tour

3.1 System Display

The 4-line by 20-character LCD display is used to guide the user through the option menus.

3.2 Keyboard

The Keyboard is a 20-button keypad arranged in a 4 X 5 matrix. Keys are defined as follows:

Key	Definition
I	Function Key 1 - Context dependent key used in conjunction with line 4 of the LCD.
II	Function Key 2 - Context dependent key used in conjunction with line 4 of the LCD.
III	Function Key 3 - Context dependent key used in conjunction with line 4 of the LCD.
IV	Function Key 4 - Context dependent key used in conjunction with line 4 of the LCD.
0 - 9	Numeric Entry Keys
CLR	General Purpose Key which is used to exit or cancel selected functions

3.3 Front Panel Controls and Connectors

AUX AUDIO - This connector (3.5mm MONO Jack) provides input from an external audio source for loading messages into the **UltraCaster** .

HANDSET - This connector (RJ-11) provides audio input from a special telephone handset for loading messages directly into the **UltraCaster**. The recommended handset for this unit:

WALKER Equipment Corporation
Highway 151 South
Ringgold, Georgia 30736
Model W3-K-M

3.4 Rear Controls and Connectors

12 VDC - This connector (2.5mm DC Power Jack) provides power to the system from an external 12V DC @ 1000 Ma source.

POWER ON/OFF - This switch enables power to the system.

LCD CONTRAST - Adjusts the contrast of the LCD display to compensate for lighting variations.

BGM IN - This connector (PHONO JACK) provides input from the BackGround Music (BGM) source.

AUDIO OUT - This connector (PHONO JACK) provides audio to the Music On-Hold or Sound System input.

LEVEL HI/LO - This control selects the audio output impedance. Most applications require the switch to be set in the "LO" position. In the "LO" position the unit can directly drive an 8 ohm speaker. The "HI" position is for those cases where a line level output drive is needed.

TRIGGER - The connector (3.5mm MONO Jack) is used to initiate message play from an external source. A momentary closure (Tip to Ring) with a switch or relay starts the next message in sequence to play if the system has been programmed for "Trigger Play".

STOP - The connector (3.5mm MONO Jack) is used to stop message play from an external source. If no message is playing, a closure on "STOP" prevents the message from playing until "STOP" is released. If a message is playing, a closure on "STOP" cancels playing that message.

COMM CONTROL - The connector (9 pin D Female) is used to communicate with COMM port computerized peripherals.

4 Getting Started

This section is intended as a quick start guide to using the **UltraCaster**. In this section you will be guided through step-by-step system setup for configuring the **UltraCaster** for 4 messages at 3.5 Khz bandwidth, timed operation at 30 second intervals. This quick start uses Nel-Tech's Sample Audio Cassette.

4.1   Fundamentals

The **UltraCaster** guides the user through configuring, programming, and loading messages via menu selections presented on the SYSTEM DISPLAY. Certain display conventions have been set up to provide the user with information of exactly where you are.

The top line of the display informs you of the current operation mode;

      NTL **UltraCaster** Menu . . . . Top level menu
      Configuration - Mode   . . . . . Configuration Menu
      Load Messages - Mode   . . . Message Load Menu
      Programming - Mode   . . . . . System Programming
      NTL **UltraCaster** 2000   System Running
      Review Msgs - Mode   . . . . . Message Review Mode
      Diagnostic Tests . . . . Diagnostic

Line 2 generally offers the user additional menu selections available under the specific Mode. Menu selections are always display within brackets;

                              "< menu item >"

Line 3 presents context-sensitive information pertaining to the specific operation being performed, while line 4 prompts the user for input based upon the available choices. For menu items, users enter either "Yes" or "No" to each item. A "No" choice moves the user to the next menu item, while a "Yes" response either performs the action or presents the user with more selections. Responses are entered by pressing the function key (I = Yes,IV = No) associated with the text information displayed on the bottom line of the SYSTEM DISPLAY.

Keys "I", "II", "III" and "IV" are function keys whose action and meaning are constantly changing depending upon the current operation. The meaning of these functions keys is determined by line 4 of the System Display. The "CLR" key always cancels the current operation and returns the user to the main menu. In addition, a 15-second timer is set each time the user enters a menu and is reset each time the user enters a key. If 15 seconds elapse without user input, the system automatically reverts to the main menu.

UltraCaster Menu Structure

<u>Main Menu Items</u>   <u>Sub Menu Items</u>

```
+) Configure System )),
*                     /) Message Tables
*                     /) Fade Level Set
*                     /) Message Level Set
*                     /) BGM Level Set
*                     /) Speaker Level Set
*                     .) Auto Message Re-load
/) Load Message(s)  )),
*                     /) Automatic Msg Load
*                     .) Manual Msg Load
/) Program System   )),
*                     /) Play Options )))))))),
*                     .) Message Selection   /) Timed Play
*                                            /) Continuous Play
*                                            .) Trigger Play
/) Run Diagnostics  )),
*                     /) Software Version
*                     /) KeyPad
/) Run System         /) LCD Display
*                     /) Data Memory
*                     /) Message Memory
.) Review Messages    /) Aux Audio
                      /) Handset Audio
                      /) BGM Level
                      /) Message Level
                      /) Speaker Level
                      /) External Trigger
                      /) External Stop
                      /) Ext Power Sensor
                      /) Bypass Relay
                      /) Option Module )),
                      /Q Real Time Clock /) 32 Input Module
                      .Q Comm Port       /) 16 In/16 Out Module
                                         .) 16 In/16 Out Dry
                                                  Closure Module
```

4.2   Configure System Example

4.2.1   Turn on system Power, the SYSTEM DISPLAY
        should appear as follows:
```
6444444444444444444447
5NTL UltraCaster Menu5
5< Configure System >5
5                     5
5 Yes            No   5
9444444444444444444448
```

4.2.2   Press "I" to configure the system
```
6444444444444444444447
5Configuration - Mode5
5<  Message Tables  >5
5                     5
5 Yes            No   5
9444444444444444444448
```

4.2.3   Press "I" to configure the message table
```
6444444444444444444447
5Config - Msg Tables 5
5#Msgs MsgSize BW Khz5
5 01   64(min)  3.5  5
5 Yes  Prev Next Quit5
9444444444444444444448
```

Note: The number "64 (min)" represents the total
amount of Message Memory Equipped. This
number varies depending upon the amount of
message memory ordered: 8, 16, 32 or 64 minutes.

4.2.4   Press "III" for Next Table
```
6444444444444444444447
5Config - Msg Tables 5
5#Msgs MsgSize BW Khz5
5 02   32(min)  3.5  5
5 Yes  Prev Next Quit5
9444444444444444444448
```

4.2.5   Press "III" for Next Table
```
6444444444444444444447
5Config - Msg Tables 5
5#Msgs MsgSize BW Khz5
5 04   16(min)  3.5  5
5 Yes  Prev Next Quit5
9444444444444444444448
```

4.2.6   Press "I" for Yes to accept this Message Table

4.3   Load Messages Example

To automatically download the message memory from
a tape cassette containing the messages. Insert the
tape cassette into the tape drive located on the top of
the **UltraCaster**. Press "IV" (No) at the main menu
until the menu selection reads "Load Message(s)".
```
6444444444444444444447
5NTL UltraCaster Menu5
5<  Load Message(s) >5
5                     5
5 Yes            No   5
9444444444444444444448
```

4.3.1   Press "I" to load messages.
```
6444444444444444444447
5Load Messages - Mode5
5<Automatic Msg Load>5
5                     5
5 Yes            No   5
9444444444444444444448
```

4.3.2   Press "I" for automatic message load
```
6444444444444444444447
5Msg Load - Tape Auto5
5Loading Message = 015
5        (note  2)   5

5Stop            Spkr5
9444444444444444444448
```

Note: Line 3 changes to reflect the current status of
the message load. The messages presented on line 3
are:

-- Rewinding Tape --
  >Tape is rewinding

-- Searching Tape --
 >Tape is playing and the system is looking for the
message audio

Once message audio is found, recording begins. Each second of recorded audio is indicated by adding a dot to the display.

After recording message 1, the system increments the message number and begins searching for message 2 on the tape. This process repeats for all three messages on the sample tape. Once all three messages are loaded, the system returns to the main menu.

To hear the audio from the tape as it is being recorded, press "IV" (Spkr). This key toggles the internal speaker on and off. Note that when the Spkr key is pressed, the dot display restarts.

4.4 Program System Example

4.4.1 To set the time interval for message play, advance to the "Program System" mode.

```
6444444444444444444447
5NTL UltraCaster Menu5
5<  Program System  >5
5                    5
5 Yes            No  5
9444444444444444444448
```

4.4.2 Press "I" to Program the Time Interval

```
6444444444444444444447
5Programming - Mode  5
5<   Play Options   >5
5                    5
5 Yes            No  5
9444444444444444444448
```

4.4.3 Press "I" for Play Options

```
6444444444444444444447
5Programming - Mode  5
5 Select Play Option 5
5<    Timed Play    >5
5 Yes            No  5
9444444444444444444448
```

4.4.4 Press "I" for Timed Play

```
6444444444444444444447
5PGM - Time Interval 5
5Time      (HH:MM:SS)5
5Interval = 00:00:00 5
5Change          Quit5
9444444444444444444448
```

4.4.5 Press "I" to change the Time Interval

```
6444444444444444444447
5PGM - Time Interval 5
5Time      (HH:MM:SS)5
5Interval = 00:00:00 5
5Change Time Interval5
9444444444444444444448
```

4.4.6 Press "0" for 0 tens of hours

Note: This is one of the few occasions when Line 4 of the display does not refer to the function keys.

```
6444444444444444444447
5PGM - Time Interval 5
5Time      (HH:MM:SS)5
5Interval = 00:00:00 5
5Change Time Interval5
9444444444444444444448
```

4.4.7 Press "0" for 0 hours

```
6444444444444444444447
5PGM - Time Interval 5
5Time      (HH:MM:SS)5
5Interval = 00:00:00 5
5Change Time Interval5
9444444444444444444448
```

4.4.8 Press "0" for 0 tens of minutes

```
6444444444444444444447
5PGM - Time Interval 5
5Time      (HH:MM:SS)5
5Interval = 00:00:00 5
5Change Time Interval5
9444444444444444444448
```

4.4.9 Press "0" for 0 minutes

```
6444444444444444444447
5PGM - Time Interval 5
5Time     (HH:MM:SS)5
5Interval = 00:00:30 5
5Change Time Interval5
9444444444444444444448
```

4.4.10 Press "3" for 30 seconds

```
6444444444444444444447
5PGM - Time Interval 5
5Time      (HH:MM:SS)5
5Interval = 00:00:30 5
5Change Time Interval5
9444444444444444444448
```

4.4.11 Press "0" to complete the 30 seconds

```
6444444444444444444447
5PGM - Time Interval 5
5Time      (HH:MM:SS)5
5Interval = 00:00:30 5
5Change         Quit5
9444444444444444444448
```

4.4.12 Press "CLR" to exit Time Interval change

4.5   Run System Example

4.5.1 To Run the System, advance to the "Run System" mode.

```
6444444444444444444447
5NTL UltraCaster Menu5
5<    Run System    >5
5                    5
5 Yes           No  5
9444444444444444444448
```

4.5.2 Press "I" to Run

Message Interval Time Display
```
6444444444444444444447
5NTL UltraCaster 20005
5 Next Message = 01  5
5Next Play = 00:00:305
5Play  Vol Spkr  Quit5
9444444444444444444448
```

4.5.3 The Next Play time counts down until 00:00:00 and then the display changes.

Message Playing Display
```
6444444444444444444447
5NTL UltraCaster 20005
5 Timed Message Play 5
5Playing Message = 015
5Stop  Vol Spkr  Quit5
9444444444444444444448
```

Play -   Provides the user the ability to manually initiate the playing of a message.

Vol -   Provides the user with the ability to adjust the audio level of the message.

Spkr -   Toggles the internal speaker On and Off.

Quit -   Stops message play and escapes from the Run Mode.

Stop -   Stops message play and resets to the next selected message and restarts the interval timer.

5 Installation

5.1   Site Requirements:

The **UltraCaster** can be installed in any normal office environment within 6 feet of a 110 VAC outlet. The product is designed for mounting on a "tabletop" or shelf unit. Care should be taken to allow access to the rear connections, tape deck and front panel controls.

5.2   Connections:

5.2.1 Audio Output - Connect the AUDIO OUT jack on the **UltraCaster** to the Music On-Hold jack of the telephone system or the Audio Input Jack of the Sound System.

5.2.2 LEVEL HI/LO - Depending upon the input impedance requirement of the telephone or sound system, set this switch to either the "LO" 8 ohm, or "HI" 1000 ohm position.

5.2.3 BGM IN - Connect the BGM IN jack on the **UltraCaster** to the output of the external music source.

5.2.4 TRIGGER - For "Trigger Play", connect a 3.5mm Male MONO Plug into the "TRIGGER" jack. Activation can be a relay closure or switch located within 1000 wire feet of the **UltraCaster**. The "TRIGGER" input is optically isolated for noise and transient protection.

5.2.5 STOP - The "STOP" input is used to HOLDOFF or Stop message play. The use the "STOP" input, connect a 3.5mm Male MONO Plug into the "STOP" jack. Activation can be a relay closure or switch located within 1000 wire feet of the **UltraCaster**. The "STOP" input is optically isolated for noise and transient protection.

5.2.6 COMM PORT - Factory option used to communicate with Sign Displays and other computerized peripherials.

5.3   Option Modules

5.3.1 Input Module - The Input Module adds the capability to play any of the 32 messages from external contact closures and provides a BUSY relay which is activated during message play. With external operation, messages can be played by contact closures such as push buttons, door switches, alarm systems, etc. Each message may be accessed externally via an optically isolated input. Distances of 1500 cable feet can be supported directly off the Input Module without external isolation of protection devices required. Connection to the Input Module is via a 50-pin CHAMP-type connector;

AMPHENOL # 57-10500-7 or equivalent

See Appendix A for wiring connection information.

5.3.2 I/O Module - The I/O Module adds the capability to play any of the first 16 messages from external contact closures and provides a BUSY relay closure associated with each of the first 16 messages, which is activated during message play. With external operation, messages can be played by contact closures such as push buttons, door switches, alarm systems, etc. Each message may be accessed externally via an optically isolated input. Distances of 1500 cable feet can be

supported directly off the I/O Module without external isolation of protection devices required. Connection to the I/O Module is via a 50-pin CHAMP-type connector;

AMPHENOL # 57-10500-7 or equivalent

See Appendix B for wiring connection information.

5.3.3 I/O 16B Module - Same as I/O Module except that the external contact closures are dry (isolated) closures.

See Appendix C for wiring connection information.

6 Program System

6.1 Play Options

The **UltraCaster** base system provides the user with four options for playing messages: Timed, Continuous, Trigger, External and Manual.

6.1.1 Timed Play Programming

To program the time interval for message play, advance to the "Program System" mode.

```
6444444444444444444447
5NTL UltraCaster Menu5
5<  Program System >5
5                   5
5 Yes            No 5
9444444444444444444448
```

6.1.1.1 Press "Yes" to Program System

```
6444444444444444444447
5Programming - Mode  5
5<   Play Options  >5
5                   5
5 Yes            No 5
9444444444444444444448
```

6.1.1.2 Press "Yes" for Play Options

```
6444444444444444444447
5Programming - Mode  5
5 Select Play Option 5
5<    Timed Play   >5
5 Yes            No 5
9444444444444444444448
```

6.1.1.3 Press "Yes" for Timed Play

```
6444444444444444444447
5PGM - Time Interval 5
5Time      (HH:MM:SS)5
5Interval = 00:00:00 5
5Change         Quit5
9444444444444444444448
```

6.1.1.4 Press "Change" to change the Time Interval

```
6444444444444444444447
5PGM - Time Interval 5
5Time      (HH:MM:SS)5
5Interval = 00:00:00 5
5Change Time Interval5
9444444444444444444448
```

6.1.1.5 Press "0 - 2" for tens of hours

```
6444444444444444444447
5PGM - Time Interval 5
5Time      (HH:MM:SS)5
5Interval = 00:00:00 5
5Change Time Interval5
9444444444444444444448
```

6.1.1.6 Press "0 - 9" for hours

```
6444444444444444444447
5PGM - Time Interval 5
5Time      (HH:MM:SS)5
5Interval = 00:00:00 5
5Change Time Interval5
9444444444444444444448
```

6.1.1.7 Press "0 - 5" for tens of minutes

```
6444444444444444444447
5PGM - Time Interval 5
5Time      (HH:MM:SS)5
5Interval = 00:00:00 5
5Change Time Interval5
9444444444444444444448
```

6.1.1.8 Press "0 - 9" for minutes

```
6444444444444444444447
5PGM - Time Interval 5
5Time      (HH:MM:SS)5
5Interval = 00:00:00 5
5Change Time Interval5
9444444444444444444448
```

6.1.1.9 Press "0 - 5" for tens of seconds

```
6444444444444444444447
5PGM - Time Interval 5
5Time      (HH:MM:SS)5
5Interval = 00:00:00 5
5Change Time Interval5
9444444444444444444448
```

6.1.1.10 Press "0 - 9" for seconds

```
6444444444444444444447
5PGM - Time Interval 5
5Time      (HH:MM:SS)5
5Interval = 00:00:00 5
5Change          Quit5
9444444444444444444448
```

6.1.1.11 Press "CLR" to exit Time Interval change

6.1.2 Continuous Play Programming

6.1.2.1 To program for continuous message play,
         advance to the "Program System" mode.

```
6444444444444444444447
5NTL UltraCaster Menu5
5<  Program System  >5
5                    5
5 Yes            No  5
9444444444444444444448
```

6.1.2.2 Press "Yes" to Program System

```
6444444444444444444447
5Programming - Mode  5
5<   Play Options   >5
5                    5
5 Yes            No  5
9444444444444444444448
```

6.1.2.3 Press "Yes" for Play Options

```
6444444444444444444447
5Programming - Mode  5
5 Select Play Option 5
5<    Timed Play    >5
5 Yes            No  5
9444444444444444444448
```

6.1.2.4 Press "No" for Timed Play

```
6444444444444444444447
5Programming - Mode  5
5 Select Play Option 5
5< Continuous Play  >5
5 Yes            No  5
9444444444444444444448
```

6.1.2.5 Press "Yes" for Continuous Play

```
6444444444444444444447
5PGM - Time Interval 5
5PGM - Continuous    5
5Constant Play = Off 5
5Change          Quit5
9444444444444444444448
```

6.1.2.6 Press "Change" to toggle Constant Play to On

```
6444444444444444444447
5PGM - Time Interval 5
5PGM - Continuous    5
5Constant Play = On  5
5Change          Quit5
9444444444444444444448
```

6.1.2.7 Press "Change" to toggle Constant Play to Off

6.1.3   Trigger Play Programming

6.1.3.1 To program for triggered message play, advance
         to the "Program System" mode.

```
6444444444444444444447
5NTL UltraCaster Menu5
5<  Program System  >5
5                    5
5 Yes            No  5
9444444444444444444448
```

6.1.3.2 Press "Yes" to Program System

```
6444444444444444444447
5Programming - Mode  5
5<   Play Options   >5
5                    5
5 Yes            No  5
9444444444444444444448
```

6.1.3.3 Press "Yes" for Play Options

```
6444444444444444444447
5Programming - Mode  5
5 Select Play Option 5
5<    Timed Play   >5
5 Yes           No  5
9444444444444444444448
```

6.1.3.4 Press "No" for Timed Play

```
6444444444444444444447
5Programming - Mode  5
5 Select Play Option 5
5< Continuous Play  >5
5 Yes           No  5
9444444444444444444448
```

6.1.3.5 Press "No" for Continuous Play

```
6444444444444444444447
5Programming - Mode  5
5 Select Play Option 5
5<   Trigger Play   >5
5 Yes           No  5
9444444444444444444448
```

6.1.3.6 Press "Yes" for Trigger Play

```
6444444444444444444447
5PGM - Time Interval 5
5PGM - Trigger       5
5Triggered Play = Off5
5Change        Quit5
9444444444444444444448
```

6.1.3.7 Press "Change" to toggle Triggered Play to On

```
6444444444444444444447
5PGM - Time Interval 5
5PGM - Trigger       5
5Triggered Play = On 5
5Change        Quit5
9444444444444444444448
```

6.1.3.8 Press "Change" to toggle Triggered Play to Off

6.2 Message Selection Programming

For messages to be played by Timed, Continuous or Trigger options, they must first be selected. This feature allows for the addition or removal of existing messages from the play list. Messages loaded from the internal tape drive are automatically selected for play and must be manually de-selected, while messages manually loaded must be manually selected.

To select or de-select a message, advance to "Program System". Upon entering the "Programming - Mode" advance to "Message Selection" and press "yes". The following screen is displayed:

```
6444444444444444444447
5Program - Msg Select5
5Msg #  = 01 02 03 045
5Active = Y  Y  Y  Y5
5Change <-   -> Done5
9444444444444444444448
```

Line 3 indicates whether the message is currently selected.

Y = Selected, N = Not Selected

Change - toggles the message closest to the "=" between selected and not selected

<- - Decrements the number of the message closest to the "="

-> - Increments the number of the message closest to the "="

Done - Completes the message selection process

7 Run System

7.1   Timed Message Play

Under Timed Operation, **UltraCaster** plays selected messages upon expiration of the time interval. One message plays per expiration of the time interval. Messages are played in sequential order from the lowest selected message to the highest. During Timed Operation, the next message to be played is shown on the SYSTEM DISPLAY. Upon expiration of the time interval, the BGM is faded to the preset level, and the message begins to play. Once the message has finished playing, the BGM is restored and the next message number, and time interval until the next message play is displayed.

During Timed Operation, manual message play (Play), message volume adjustment (Vol) and Speaker (Spkr) On/Off are enabled. Halt Timed Operation, the user must press the "Quit" or "CLR" switches. Pressing the "Stop" key will stop the current message and reset the timer for the next message.

7.2   Continuous Play

For Continuous Play, selected messages are played one after the other without any time between messages. Messages are played in sequential order from the lowest selected message to the highest selected message back again to the lowest. Unlike Timed Operation, Continuous Play does not restore the BGM between messages.

During Continuous Play, Manual, Timed and Trigger message play is disabled. Message volume adjustment (Vol) and Speaker (Spkr) On/Off is enabled. Halt Continuous Operation, the user must press the "Quit" or "CLR" switches. Pressing the "Stop" key will stop the current message and reset the timer for the next message.

7.3   Triggered Play

For Triggered Play, selected messages are played after a momentary closure of the "TRIGGER". Messages are played in sequential order from the lowest selected message to the highest selected message back again to the lowest. Like Timed Operation, Trigger Play restores the BGM between messages.

During Trigger Play, manual message play (Play), message volume adjustment (Vol) and Speaker (Spkr) On/Off are enabled. To halt Trigger Play, the user must press the "Quit" or "CLR" switches.

7.4   Manual Play

Manual Play provides a means for the user to play a message immediately. Under Manual Play, messages need not be selected. To Manual Play a message, the user presses the "PLAY" switch, enters the message number and then presses "START". The BGM is faded to the preset level, and the message begins to play. Once the message is finished playing, the BGM is restored and the system returns to normal operation.

7.5   External Message Play (Option Module)

External Message Play provides a means for the user to play any loaded message from an external contact closure. For External Play, messages need not be selected. To play a message from an external source requires a contact closure to be applied to the appropriate signal lead of the Input Module or Input/Output Module or I/O 16B Module. Each contact closure is remembered and the associated message is inserted into the message play list. A momentary closure (250 Msec) causes the associated message to be inserted into the play list. After the message is played, it is removed from the play list. Should the closure occur again or if the closure is held, the message is again inserted into the play list. Messages are played by first examining the programmed message play operation (Timed, Triggered), then examining the play list for contact closure messages. Contact closure messages are played on a "round robin" basis, starting at the

lowest numbered message to the highest and back. Should a message have a constant contact closure, it will be played once; all other contact closure messages will be played prior to play that message again.

7.6   Speaker On/Off

The **UltraCaster** has an internal speaker for the convenience of the user in listening to both messages and the background music while in "Run Mode." The level of the audio at the speaker is set in the "Configuration Mode." The "Spkr" switch turns the internal speaker On and Off.

7.7   Message Volume Adjustment

Message volume is adjustable during "Run Mode" by pressing the "Vol" switch.

```
644444444444444444447
5NTL UltraCaster 20005
5    Message Level    5
5MX------|---------MN5
5 Yes    <-    ->   No 5
944444444444444444448
```

Line 3 shows the current level of the message relative to maximum (MX) volume and minimum (MN) volume

Yes -   Accepts the the indicated level as the new message volume

<-   -   Increases the message volume

->   -   Decreases the message volume

No   -   Restores the message volume to its prior setting

8 Configuration

UltraCaster may be configured by the user to better meet their application needs. Configuration options include: Message Memory Capacity (factory option), Number of Messages, Message Bandwidth, BGM Fade Level, Message Level, BGM Level and Speaker Level.

8.1   Configuring The UltraCaster

8.1.1   Message Tables

The **UltraCaster** uses pre-defined Message Tables to simplify the selection of Number of Messages, Message Size and MessageBandwidth. The message Table is structured in the following manner:

Message Memory Capacity - The **UltraCaster** supports message memory capacities of 8, 16, 32 and 64 minutes of audio information at the standard 3.5 Khz bandwidth. The amount of message memory is equipped at the factory and is not field-upgradable.

Number of Messages - The **UltraCaster** supports 1, 2, 4, 8, 16 or 32 messages. The Number of Messages represents the maximum number of messages which may be loaded. If, for example, you wanted to load 13 messages, the system must be configured for 16 messages.

Message Bandwidth - The **UltraCaster** supports 4 bandwidth options; 3.5 Khz, 3.5 Khz Enhanced, 7.0 Khz and 7.0 Khz Enhanced. Message bandwidth is directly representative of the audio quality of the system. The higher the bandwidth the better the audio quality. In addition, increasing the system bandwidth decreases the available time per message.

3.5 Khz Bandwidth - is most appropriate for telephone-oriented applications. At this setting, the audio signal is digitized at 35,000 bits per second.

3.5 Khz Enhanced Bandwidth - is appropriate for telephone-oriented applications and for store point-of-purchase and exhibits applications of speech-only messages. At this setting, the audio signal is digitized at 46,000 bits per second representing a 30% increase in the digital sampling rate and a corresponding 30% decrease in total audio message capacity of the system.

7.0 Khz Bandwidth - is appropriate for store point-of-purchase and exhibit applications where messages are played over a sound system. At this setting, the audio signal is sampled at 70,000 bits per second yielding 1/2 of the total audio message capacity over the standard 3.5 Khz bandwidth.

7.0 Khz Enhanced Bandwidth - increases the digital sampling rate to 92,000 bits per second representing a 30% increase in the digital sampling rate and a corresponding 30% decrease in total audio message capacity over the standard 7.0 Khz bandwidth. The setting yields high quality audio reproduction for sensitive audio broadcasting applications.

Message Table

Number of Messages	Message Memory Capacity				Bandwidth (Khz)
	8 Min	16 Min	32 Min	64 Min	
1	8 min	16 min	32 min	64 min	3.5
2	4 min	8 min	16 min	32 min	3.5
4	2 min	4 min	8 min	16 min	3.5
8	1 min	2 min	4 min	8 min	3.5
16	30 sec	1 min	2 min	4 min	3.5
32	15 sec	30 sec	1 min	2 min	3.5
1	6 min	12 min	24 min	48 min	3.5E
2	3 min	6 min	12 min	24 min	3.5E
4	90 sec	3 min	6 min	12 min	3.5E
8	45 sec	90 sec	3 min	6 min	3.5E
16	22 sec	45 sec	90 sec	3 min	3.5E
32	11 sec	22 sec	45 sec	90 sec	3.5E
1	4 min	8 min	16 min	32 min	7.0
2	2 min	4 min	8 min	16 min	7.0
4	1 min	2 min	4 min	8 min	7.0
8	30 sec	1 min	2 min	4 min	7.0
16	15 sec	30 sec	1 min	2 min	7.0
32	7 sec	15 sec	30 sec	1 min	7.0
1	3 min	6 min	12 min	24 min	7.0E
2	90 sec	3 min	6 min	12 min	7.0E
4	45 sec	90 sec	3 min	6 min	7.0E
8	22 sec	45 sec	90 sec	3 min	7.0E
16	11 sec	22 sec	45 sec	90 sec	7.0E
32	5 sec	11 sec	22 sec	45 sec	7.0E

8.1.2 Message Table Programming

Message Tables are present in the order listed on the previous page. Entering "Next" steps down the message table, increasing the number of messages and the system bandwidth. Entering "Prev" steps up the table with lower number of messages at a lower system bandwidth. The message table starts with 1 - 32 messages at 3.5 Khz, advances to 1 - 32 messages at 3.5 Khz Enhanced, to 1 - 32 messages at 7.0 Khz, to 1 - 32 messages at 7.0 Khz Enhanced

8.1.2.1 To program the for a specific message configuration, advance to the "Configure System" mode.

```
64444444444444444447
5NTL UltraCaster Menu5
5< Configure System >5
5                    5
5 Yes            No  5
94444444444444444448
```

8.1.2.2 Press "Yes" to Configure System

```
64444444444444444447
5Configuration - Mode5
5<  Message Tables  >5
5                    5
5 Yes            No  5
94444444444444444448
```

8.1.2.3 Press "Yes" for Message Tables

```
64444444444444444447
5Config - Msg Tables 5
5#Msgs MsgSize BW Khz5
5 01   64(min)  3.5  5
5 Yes   Prev Next Quit5
94444444444444444448
```

Note: The number "64(min)" represents the total amount of Message Memory Equipped. This number varies depending upon the amount of message memory ordered; 8(min), 16(min), 32(min) or 64 (min).

Yes - To accept the current table entry as the new system configuration. Changing the system configuration erases all existing messages and message selections.

Next - For next table entry

Prev - For previous table entry

Quit - To cancel the Message Configuration update and restore the existing configuration. Quit allows the user to scan the various configuration options without modifying the system's current setting.

8.1.3 Fade Level

The **UltraCaster** may be configured to reduce the level of the background music during message play by setting the Fade Level parameter. The **UltraCaster** provides the user with complete control over the level of background music level.

When the Fade Level is set to maximum (MX), no background music is heard during message play. For applications where the stored message is voice only, a partial fade adds the effect of providing a music background during the play of a message, while for applications where the message contains music, a full fade is desired.

8.1.3.1 Fade Level Adjustment

The Fade Level is only adjustable in the Configuration Mode.

```
64444444444444444447
5NTL UltraCaster Menu5
5< Configure System >5
5                    5
5 Yes            No  5
94444444444444444448
```

8.1.3.1.1
Press "Yes" to Configure System

```
64444444444444444444447
5Configuration - Mode5
5<  Fade Level Set  >5
5                    5
5 Yes            No  5
94444444444444444444448
```

8.1.3.1.2   Press "Yes" to set the fade level

```
64444444444444444444447
5Configuration - Mode5
5   BGM Fade Level   5
5MN------|---------MX5
5 Yes   <-   ->  No  5
94444444444444444444448
```

Line 3 shows the current fade level relative to maximum (MX) fade and minimum (MN) fade.

Yes -   Accepts the the indicated level as the new fade level

<-   Decreases the fade level (more background music)

->   Increases the fade level (less background music)

No -   Restores the fade level to its prior setting

8.1.4   Message Level

The **UltraCaster** provides the user with control over the level of the message audio. The message level may be set as both a configuration parameter and during message play.

8.1.4.1   Message Level Adjustment

8.1.4.1.1   Advance the the Configuration Mode.

```
64444444444444444444447
5NTL UltraCaster Menu5
5< Configure System >5
5                    5
5 Yes            No  5
94444444444444444444448
```

8.1.4.1.2 Press "Yes" to Configure System

```
64444444444444444444447
5Configuration - Mode5
5< Message Level Set>5
5                    5
5 Yes            No  5
94444444444444444444448
```

8.1.4.1.3 Press "Yes" to set the message level

```
64444444444444444444447
5Configuration - Mode5
5   Message Level    5
5MX------|---------MN5
5 Yes   <-   ->  No  5
94444444444444444444448
```

Line 3 shows the current message level relative to maximum (MX) and minimum (MN) settings.

Yes -   Accepts the the indicated level as the new message level

<-   Increases the message level

->   Decreases the message level

No -   Restores the message level to its prior setting

8.1.5   Background Music (BGM) Level

The recommended method for adjusting the level of the BackGround Music (BGM) is to adjust the level at the BGM source. However, the **UltraCaster** does provide the user with control over the level of the background music audio. The BGM Level is only adjustable in the Configuration Mode.

8.1.5.1 BackGround Music Level Adjustment

8.1.5.1.1 Advance the the Configuration Mode.
```
64444444444444444444447
5NTL UltraCaster Menu5
5< Configure System >5
5                    5
5 Yes            No  5
94444444444444444444448
```

8.1.5.1.2
Press "Yes" to Configure System

```
64444444444444444447
5Configuration - Mode5
5<  BGM Level Set  >5
5                  5
5 Yes           No 5
94444444444444444448
```

8.1.5.1.3   Press "Yes" to set the BGM level

```
64444444444444444447
5Configuration - Mode5
5     BGM Level     5
5MX------|---------MN5
5 Yes   <-   ->  No 5
94444444444444444448
```

Line 3 shows the current BGM level relative to maximum (MX) and minimum (MN) settings.

Yes -   Accepts the the indicated level as the new BGM level

<- -   Increases the BGM level

-> -   Decreases the BGM level

No -   Restores the BGM level to its prior setting

8.1.6 Speaker Level

The **UltraCaster** provides the user with control over the level of the speaker audio. The Speaker Level is only adjustable in the Configuration Mode.

8.1.6.1   Speaker Level Adjustment

8.1.6.1.1   Advance to the Configuration Mode.

```
64444444444444444447
5NTL UltraCaster Menu5
5< Configure System >5
5                  5
5 Yes           No 5
94444444444444444448
```

8.1.6.1.2 Press "Yes" to Configure System

```
64444444444444444447
5Configuration - Mode5
5< Speaker Level Set>5
5                  5
5 Yes           No 5
94444444444444444448
```

8.1.6.1.3 Press "Yes" to set the Speaker level

```
64444444444444444447
5Configuration - Mode5
5    Speaker Level   5
5MX------|---------MN5
5 Yes   <-   ->  No 5
94444444444444444448
```

Line 3 shows the current speaker level relative to maximum (MX) and minimum (MN) settings.

Yes -   Accepts the the indicated level as the new speaker level

<-   Increases the speaker level

->   Decreases the speaker level

No -   Restores the speaker level to its prior setting

8.1.7   Automatic Message Re-Loading

This option provides the **UltraCaster** with the capability to automatically, upon power on, to load the messages from tape and begin "running" as soon as messages have been loaded.

NOTE: all levels, settings and configurations remain in effect from the last time the unit was used.

8.1.7.1 Automatic Message Re-Load Option

8.1.7.1.1   Advance to the Configuration Mode.

```
644444444444444444447
5NTL UltraCaster Menu5
5< Auto Msg Re-Load >5
5                    5
5 Yes            No  5
944444444444444444448
```

8.1.7.1.2   Press "Yes" to Access Re-Load Option

```
644444444444444444447
5Configuration - Mode5
5Auto Message Re-Load5
5 Auto Re-Load = Off 5
5 Change        Quit5
944444444444444444448
```

8.1.7.1.3   Press "Change" to enable or disable re-load option

```
644444444444444444447
5Configuration - Mode5
5Auto Message Re-Load5
5 Auto Re-Load = On  5
5 Change        Quit5
944444444444444444448
```

9 Message Loading

The **UltraCaster** allows for messages to be loaded automatically through the internal tape deck or manually with an external handset or other external audio source.

9.1   Automatic Message Loading

Automatic message loading simplifies the process of loading messages into the **UltraCaster**. When selected, automatic message loading rewinds the tape and begins searching for the first message. Messages contained on the tape are loaded in order, starting at one and advancing to either the last message on the tape, or the last configured message in the system. Messages that are automatically loaded are also automatically selected for play.

Loading the **UltraCaster** from a tape cassette is as simple as inserting the tape cassette into the tape transport located on the top of the **UltraCaster** and closing the door.

   Note: If the Automatic Message Re-Loading option is enabled, the system will, upon power up, automatically load the tape messages and begin operation without user input. Automatic Message Re-Loading only works upon power up.

9.1.1   Advance to the Load Messages Mode.

```
644444444444444444447
5NTL UltraCaster Menu5
5< Load Message(s)  >5
5                    5
5 Yes            No  5
944444444444444444448
```

9.1.2   Press "Yes" to Load Messages

```
644444444444444444447
5Load Messages - Mode5
5<Automatic Msg Load>5
5                    5
5 Yes            No  5
944444444444444444448
```

9.1.3   Press "Yes" for automatic message load

```
644444444444444444447
5Msg Load - Tape Auto5
5Loading Message = 015
5     (note 2)       5
5Stop           Spkr5
944444444444444444448
```

   Note: Line 3 changes to reflect the current status of the message load. The messages presented on line 3 are:

-- Rewinding Tape --
   >Tape is rewinding

-- Searching Tape --
   >Tape is playing and the system is looking for the message audio

>Once message audio is found, recording begins. Each second of recorded audio is indicated by adding a dot to the display.

Stop
>Stop message loading. Any messages which have completed loading prior to pressing "Stop" exist in message memory.

Spkr
>Toggle internal speaker On/Off for listening to messages as they are being loaded.

After recording message 1, the system increments the message number and begins searching for message 2 on the tape, etc. Once all the messages are loaded, the system returns to the main menu.

9.2   Manual Message Loading

UltraCaster allows for manually loading messages from two types of external audio input sources, Handset or Aux Input.

9.2.1 Advance to the Load Messages Mode.

```
64444444444444444447
5NTL UltraCaster Menu5
5< Load Message(s)  >5
5                    5
5 Yes            No  5
94444444444444444448
```

9.2.2 Press "Yes" to Load Messages

```
64444444444444444447
5Load Messages - Mode5
5< Manual Msg Load  >5
5                    5
5 Yes            No  5
94444444444444444448
```

9.2.3 Press "Yes" for manual message load

```
64444444444444444447
5Msg Load - Manual   5
5Enter Message # = 00 5
5-  Select Message  -5
5                    5
94444444444444444448
```

9.2.4 Enter the number of the message to be loaded. Note that message numbers require two digits (01, 02...).

9.2.5 If the message already exists, then the following screen is displayed.

```
64444444444444444447
5Msg Load - Manual   5
5Enter Message # = 015
5 Re-Record Message? 5
5 Yes            No  5
94444444444444444448
```

Yes - Erases current message and allows the user to re-record the message.

No - Cancel message record

9.2.6

```
64444444444444444447
5Msg Load - Manual   5
5Enter Message # = 015
5                    5
5 Rec      Spkr Quit5
94444444444444444448
```

Rec -   Starts message recording

Spkr -   Toggles the internal speaker On/Off

Quit -   Cancels message record

9.2.7

```
64444444444444444447
5Msg Load - Manual   5
5Enter Message # = 015
5  Recording Message 5
5     Stop Spkr Quit5
94444444444444444448
```

Stop -   Stops message record

Spkr -   Toggles the internal speaker On/Off

Quit -   Cancels message record

9.2.8

```
6444444444444444444447
5Msg Load - Manual    5
5Enter Message # = 015
5- Message Recorded -5
5 Rec       Spkr Quit5
9444444444444444444448
```

Rec - Causes an immediate re-recording of the message without prompting the user to confirm.

Spkr -   Toggles the internal speaker On/Off

Quit - Stop action on the current message and requests the user to enter another message number.

10   Message Review

Message Review allows the user to play a message without broadcasting the message over the sound system. In review mode, the message is heard through either the monitor speaker or handset ear piece.

10.1   Advance to the Review Messages Mode.

```
6444444444444444444447
5NTL UltraCaster Menu5
5< Review Messages >5
5                    5
5 Yes          No  5
9444444444444444444448
```

10.1.1 Press "Yes" to Review Messages

```
6444444444444444444447
5Review Msgs - Mode  5
5Enter Message # = 005
5- Select Message  -5
5                   5
9444444444444444444448
```

10.1.1.1 Enter the number of the message to be reviewed. Note that message numbers require two digits (01, 02...).

10.1.1.2

```
6444444444444444444447
5Review Msgs - Mode  5
5Enter Message # = 015
5-   Play Message? -5
5Start Stop     Quit5
9444444444444444444448
```

Start -   Starts playing the message for review

Stop - Stops message review

Quit -   Cancels message review

10.1.1.3

```
6444444444444444444447
5Review Msgs - Mode  5
5Enter Message # = 015
5Playing Message = 015
5     Stop      Quit5
9444444444444444444448
```

Stop - Stops message review

Quit -   Cancels message review

11   Battery Operation

The **UltraCaster** contains an internal NiCad battery for protection from messages loss due to external power failure. When external power fails, the **UltraCaster** enters a special Idle Mode to preserve battery power. The **UltraCaster** has an internal Bypass Relay. This relay is normally engaged, routing all BGM audio signals through the **UltraCaster**'s electronics. Under power failure and Idle Mode conditions, the relay is disengaged, connecting the BGM IN directly to the Audio Out. Upon restoration of external power, the **UltraCaster** returns to normal operation.

In addition to the internal NiCad battery for the protection of messages, the **UltraCaster** protects Configuration parameters, Message Table, Fade Level, Message Level, BGM Level and Speaker Level, in a separate non-volatile memory.

12   Diagnostics

UltraCaster provides an extensive set of System Diagnostics. These diagnostic tests cover all the major hardware elements of the **UltraCaster**.

12.1   Software Version

Provides information regarding the level of the software loaded.

12.2   Keypad

Tests each key of the keypad by displaying which key is depressed.

12.3   LCD Display

Tests the Liquid Crystal Display by writing text information to the display.

12.4   Data Memory

Tests the internal non-volatile data memory.

12.5   Message Memory

The **UltraCaster** can hold up to 32 memory chips when fully equipped. The test requires the insertion of an audio tape into the tape transport. The tape can be any standard music cassette with at least 30 minutes of audio per side. This tests loads the audio into the message memory using 7.0 Khz Enhanced bandwidth. The display indicates which memory chip is loading until all equipped memory chips have been filled. After the message memory is loaded, the user begins playback. The display indicates from which chip the audio information is being played. The audio playback should be high quality without noise, pops, clicks, etc.

12.6   Aux Audio

The AUX AUDIO path is tested by playing the audio information being inserted in the AUX AUDIO jack through the internal speaker.

12.7   Handset Audio

The HANDSET path is tested by speaking into the handset. The audio spoken into the handset will be heard in the ear piece.

12.8   BGM Level

The BGM Level test requires the user to insert an audio source into the BGM IN and a speaker on the AUDIO OUT. Using the keypad, raise and lower the BGM audio level.

12.9   Message Level

The Message Level test requires the user to insert an audio source into the AUX AUDIO and a speaker on the AUDIO OUT. Using the keypad, raise and lower the Message level.

12.10 Speaker Level

The Speaker Level test requires the user to insert an audio source into the AUX AUDIO. Using the keypad, raise and lower the Speaker level.

12.11 Trigger

The Trigger test requires the user to insert a shorting 3.5mm MONO plug into the TRIGGER jack. With no plug inserted, the Ext Trigger should be OPEN, with the shorted plug inserted, the Trigger should be CLOSED.

12.12 External Stop

The External Stop test requires the user to insert a shorting 3.5mm MONO plug into the STOP jack. With no plug inserted, the Ext Stop should be OPEN, with the shorted plug inserted, the Ext Stop should be CLOSED.

12.13 External Power Sensor

This test requires that the internal battery be charged. Remove the external DC power pack from the AC plug. The display should indicate if the external power is present or not.

12.14 Bypass Relay

This test checks the operation of the power fail bypass relay.   This relay is normally engaged, routing all BGM audio signals through the **UltraCaster**'s electronics. Pressing "I" causes the relay to disengage, routing the audio signals directly to the AUDIO OUT port.

12.15 Option Module

This test checks the operation of the option module. The **UltraCaster** supports 3 differents types of option modules: Input Module (32 inputs / 1 output), I/O Module (16 inputs / 16 outputs), and I/O 16B (16 inputs / 16 dry closure outputs). This test helps in confirming the external wiring of the external contact closures by displaying the start of each contact closure, one at a time. Should multiple contact closure be present, the lowest numbered closure will be displayed. With the I/O Modules, an input closure causes the corresponding output closure to be activated, while with the Input Module, each external closure causes the BUSY relay to activate.

13   Tape Preparation

13.1   Tape Cassette Type

The **UltraCaster** uses "Normal Bias" tape cassettes. The tape cassette size should not exceed 90 minutes. To utilize the multi-message capability of the **UltraCaster** requires building the tape under the following condition

Use only "Normal Bias" (Type I) tape cassettes not exceeding 90 minutes. Do not use DOLBY or any other type of noise reduction systems. The **UltraCaster** was designed for optimum results without such noise reduction techniques.

Record your productions in **2 channel mono** with the audio level averaging -6 db while peaking at no hotter then -3 db. Recordings made in this format will optimize the digitizing process and provide consistent output levels on all Nel-Tech Labs equipment.

13.2   Studio Instructions - Audio Only Message Tapes

The tape cassette can be prepared with 1 to 32 messages. Messages are placed on the tape in sequential order. The **UltraCaster** searches the tape for audio information prior to beginning record. The maximum search time from the beginning of the tape is 25 seconds. Be certain when preparing a tape that the audio information begins within that time. The end of a message is indicated by a minimum of 10 seconds of silence. Upon finding the 10 seconds of silence, the **UltraCaster** begins searching for the next message on the tape. The next message must start within 20 seconds of the end to the last message. Periods of silence greater than 20 seconds indicate the last message on the tape, and message loading automatically stops.

14   Troubleshooting

14.1   System Messages

* TAPE DECK ERROR *	The internal tape transport has failed to properly respond. Remove tape cassette and power cycle system. If message returns, contact Nel-Tech for service informatio
* CASSETTE ERROR * Probable tape cassette jam or incorrect type of cassette.	
* NO ENERGY DETECTED *	In attempting to load messages from the tape cassette, no audio information was detected within 25 seconds of the beginning of the tape.
NO CASSETTE IN DRIVE	Either there is no tape cassette in the transport or the tape cassette is an incorrect type. See "13 - Tape Preparation".
MESSAGE NOT PRESENT	The user attempted to play a message which has not been loaded into message memory.
INVALID MESSAGE #	The user entered a message number which is not valid for the current configuration, i.e., the user entered message number 05 when the system has been configured for 4 messages.
NO MESSAGES SELECTED	The user attempted to RUN the system without any messages being selected for play.
- - System Idle - -	External Power (12VDC) has failed and system is in idle mode to preserve battery power.
- Battery Operation -	External Power (12VDC) has failed and system is operating under the internal battery.
EXTERNAL POWER FAIL	External Power (12VDC) has failed and system is operating under the internal battery.
No Play - STOP Active	A message play has been started but the STOP input is active, holding the play of the message. Message can not play until the STOP input is released.
Feature Not Released-	The user attempted to access a feature which is not present on this release, or configuration, of the software.

15 Contacting Technical Support

If you are experiencing a problem with your UltraCaster-2000 and have been unable to correct it with the information in this manual, contact the dealer from which you purchased the unit. If you are unable to contact or correct your problems through your dealer you may contact the Nel-Tech customer service department for support.

BEFORE YOU CALL...

Before contacting the Nel-Tech technical assistance department please take a moment to follow these simple instructions:

! Read the Limited Warranty on page 2 of this manual. It is important that you understand the warranty and return procedures.

! Have the serial number of the unit ready. This number can be found on the label on the bottom of the unit. Warranty work will only be performed on units with valid serial numbers.

! Make sure you have a basic understanding of the equipment and the time to try to troubleshoot your problem over the phone.

! **DO NOT** disconnect the equipment. Many problems may be diagnosed and fixed over the phone so leave the UltraCaster-2000 and all other involved equipment attached and operational.

! Call from a location near where the equipment is installed.

! Know the amount of audio storage. The amount of memory is stamped or written along with the serial number on the bottom of the unit.

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! Have the date of purchase and the name of the dealer from which you purchased the unit.

The Nel-Tech technical assistance department can be reached at 1-603-641-8844 and is available from 9:00am to 5:00pm Eastern.

INPUT MODULE CONNECTOR DEFINITION

Pin #	Definition		Pin #	Definition
1	Input 1		26	Input 26
2	Input 2		27	Input 27
3	Input 3		28	Input 28
4	Input 4		29	Input 29
5	Input 5		30	Input 30
6	Input 6		31	Input 31
7	Input 7		32	Input 32
8	Input 8		33	Busy A - COM
9	Input 9		34	Busy A - NC
10	Input 10		35	Busy A - NO
11	Input 11		36	Busy B - COM
12	Input 12		37	Busy B - NC
13	Input 13		38	Busy B - NO
14	Input 14		39	Ground
15	Input 15		40	Ground
16	Input 16		41	Ground
17	Input 17		42	Ground
18	Input 18		43	Ground
19	Input 19		44	Ground
20	Input 20		45	Ground
21	Input 21		46	Ground
22	Input 22		47	Ground
23	Input 23		48	Ground
24	Input 24		49	Ground
25	Input 25		50	Ground

I/O MODULE CONNECTOR DEFINITION

Pin #	Definition		Pin #	Definition
1	Input 1		26	Out 1 - NC
2	Input 2		27	Out 2 - NC
3	Input 3		28	Out 3 - NC
4	Input 4		29	Out 4 - NC
5	Input 5		30	Out 5 - NC
6	Input 6		31	Out 6 - NC
7	Input 7		32	Out 7 - NC
8	Input 8		33	Out 8 - NC
9	Input 9		34	Out 9 - NC
10	Input 10		35	Out 10 - NC
11	Input 11		36	Out 11 - NC
12	Input 12		37	Out 12 - NC
13	Input 13		38	Out 13 - NC
14	Input 14		39	Out 14 - NC
15	Input 15		40	Out 15 - NC
16	Input 16		41	Out 16 - NC
17	Input - Ground		42	Out - Ground
18	Input - Ground		43	Out - Ground
19	Input - Ground		44	Out - Ground
20	Input - Ground		45	Out - Ground
21	Input - Ground		46	Out - Ground
22	Input - Ground		47	Out - Ground
23	Input - Ground		48	Out - Ground
24	Input - Ground		49	Out - Ground
25	Input - Ground		50	Out - Ground

APPENDIX C

I/O 16B MODULE CONNECTOR DEFINITION

Pin #	Definition	Pin #	Definition
1	Input 1	26	Out 1 - NO
2	Input 2	27	Out 2 - NO
3	Input 3	28	Out 3 - NO
4	Input 4	29	Out 4 - NO
5	Input 5	30	Out 5 - NO
6	Input 6	31	Out 6 - NO
7	Input 7	32	Out 7 - NO
8	Input 8	33	Out 8 - NO
9	Input 9	34	Out 9 - NO
10	Input 10	35	Out 10 - NO
11	Input 11	36	Out 11 - NO
12	Input 12	37	Out 12 - NO
13	Input 13	38	Out 13 - NO
14	Input 14	39	Out 14 - NO
15	Input 15	40	Out 15 - NO
16	Input 16	41	Out 16 - NO
17	Input - Ground	42	Input - Ground
18	Out 1 - COM	43	Out 9 - COM
19	Out 2 - COM	44	Out 10 - COM
20	Out 3 - COM	45	Out 11 - COM
21	Out 4 - COM	46	Out 12 - COM
22	Out 5 - COM	47	Out 13 - COM
23	Out 6 - COM	48	Out 14 - COM
24	Out 7 - COM	49	Out 15 - COM
25	Out 8 - COM	50	Out 16 - COM